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**REMARKS**

Reconsideration of the present application is respectfully requested. Claim 1 has been amended to incorporate the subject matter of claim 14, now canceled, and to specifically define the additives used in the claimed invention. The specification of the subject application does not indicate that the additive as recited in the previous claim 1 is a non-ionic surfactant. However, additives used in the present invention include SPAN80<sup>TM</sup>, BRIJ30<sup>TM</sup>, and NP20<sup>TM</sup>, (see specification at page 6) which are all non-ionic surfactants. "SPAN80" is sorbitan monooleate, and "BRIJ30" is polyoxyethylene(4) lauryl ether, both which are available from Sigma-Aldrich Co., as evidenced by copies of the relevant pages of the 2000-2001 catalog of Sigma-Aldrich Co., submitted herewith as Exhibit "A". "NP20" is ethoxylated nonyl phenol (with 20 EO's), as disclosed in U.S. Patent No., 5,316,664, issued in 1994, also submitted herewith as Exhibit "B".

As can be seen from their chemical name or structure, sorbitan monooleate (SPAN80<sup>TM</sup>), polyoxyethylene (4) lauryl ether (BRIJ30<sup>TM</sup>), and ethoxylated nonyl phenol (NP20<sup>TM</sup>) are all non-ionic. Therefore, even though the specification of the subject application (1) does not clearly state that the additive is a non-ionic surfactant, or (2) the generic chemical names of such non-ionic surfactants, a person of ordinary skill in the art would understand that the specific non-ionic surfactants, and their generic chemical names are within the scope of the specification as filed. Thus, the applicants submit that the specification of the subject application supports amended claim 1, and that no new matter is added at the present time.

As amended, the applicant submits that claim 1, and the claims depending from it, are in condition for allowance. The claimed invention distinguishes over U.S. Patent No. 6,635,189 to Suh et al. (“Cited Reference 1”) and U.S. Patent No. 5,480,573 to Durfee et al. (“Cited Reference 2”) in view of the following:

Suh et al. does not teach or suggest to adding an additive to an ER fluid in order to improve flow properties of the fluid and to prevent precipitation of particles in the fluid. Furthermore, Durfee et al. does not teach to add a surfactant to an ER fluid, and it only describes in column 2, lines 17-21 that “U.S. Patent No. 5,032,307 teaches an ER material containing a carrier fluid, an anionic surfactant particle component, and an activator. The non-abrasive anionic surfactant acts as both a particle component and a surfactant...” Thus, even if Durfee et al. teaches adding a surfactant to an ER fluid by mentioning the disclosure of U.S. Patent No. 5,032,307, it merely teaches to use an anionic surfactant acting as both a particle component and a surfactant. That is, it does not teach the use of non-ionic surfactants as disclosed and claimed herein.

Therefore, it is submitted that Suh et al. in view of Durfee et al. does not teach or suggest the claimed ER fluid comprising less than 1 wt% (excluding 0 wt%) of non-ionic surfactant selected from the Markush group set forth in claim 1 (or mixtures thereof) for improving flow properties of the fluid and for preventing precipitation of particles in the fluid as an essential component.

Wherefore, based upon the foregoing, it is submitted that the present application is in condition of allowance and a relatively early reply to this paper would be appreciated.

Respectfully submitted,



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ALDRICH

Aldrich

Handbook of Fine Chemicals and Laboratory Equipment



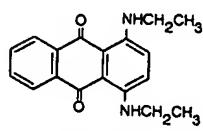
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■ Boron trif ■

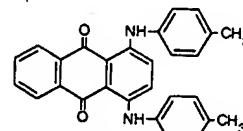
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43,428-0	Boron trifluoride-tetrahydrofuran complex [462-34-0] $\text{BF}_3 \cdot \text{THF}$ FW 139.91 .....	100mL	16.30	46		
★	mp -123° bp 180° d 1.268 Fp 198°F(92°C) CORROSIVE Used extensively as a polymerization initiator. <i>Vysokomol. Soedin., Ser. A Ser. B</i> 1995, 37, 554, 1838. <i>Macromolecules</i> 1995, 28, 3002. Contains >0.5% $\text{SO}_2$ to suppress peroxide formation	500mL	40.40			
30,762-9	Boron trifluoride, 98+% [13517-10-7] $\text{BF}_3$ FW 391.52 d 3.350 <i>Fieser</i> 9,65 .....	1g	22.90	21		
★	<i>R&amp;S</i> 1(3),3353A CORROSIVE MOISTURE-SENSITIVE	5g	70.90			
		25g	282.80	23		
	Boron trioxide, see Boron oxide					
18,339-3	Boron tris(trifluoroacetate), 1.0M solution in trifluoroacetic acid [350-70-9]..... ( $\text{CF}_3\text{CO}_2\text{B}$ ) FW 349.86 d 1.521 Fp none <i>Fieser</i> 4,46 5,55 <i>Safety</i> 2,485A CORROSIVE MOISTURE-SENSITIVE	100mL	185.50	20		
34,689-6	Bottle-cap sealing wax mp 73-75° .....	250g	14.80	20		
	Specially formulated for sealing bottle caps for storage of air- and moisture-sensitive corrosive samples.	500g	23.60			
	BPB, see Bromophenol Blue					
	BPCC, see 23,674-8, 2,2'-Bipyridinium chlorochromate page 189					
	BPEA, see 26,419-9, 9,10-Bis(phenylethynyl)anthracene page 216					
	BPSCCO 2223, see 37,872-0, Bismuth lead strontium calcium copper oxide page 211					
	bpy, see D21,630-5, 2,2'-Dipyridyl page 708					
	Brass, see Copper-zinc alloy					
	Brassylic acid, see U60-1, 1,11-Undecanedicarboxylic acid page 1715					
	Brazil wax, see 24,321-3, Carnauba wax page 348					
	Bredereck's Reagent, see 38,421-6, <i>tert</i> -Butoxybis(dimethylamino)methane page 291					
23,598-9	Brij® 30 [9002-92-0] [polyoxyethylene(4) lauryl ether] $\text{C}_{12}\text{H}_{25}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ ,..... n~4, n $\bar{f}$ 1.4510 d 0.950 Fp >230°F(110°C) <i>Fieser</i> 1,892 <i>Merck Index</i> 12,7717 <i>FT-IR</i> 1(1),208B <i>Safety</i> 2,487D <i>R&amp;S</i> 1(1),229D <i>RTECS</i> # JR5990000 IRRITANT	5mL	11.20	2		
★	Average $M_n$ ca. 362. HLB 9.7	100mL	13.50			
		1L	49.80			
85,836-6	Brij® 35 [9002-92-0] [polyoxyethylene(23) lauryl ether] $\text{C}_{12}\text{H}_{25}(\text{OCH}_2\text{CH}_2)_{23}\text{OH}$ ,..... n~23 ★ Detergent for ion-exchange chromatography. Average $M_n$ ca. 1,198. HLB 16.9	5g	8.60			
		100g	9.60			
		500g	21.70			
		1kg	37.00			
38,883-1	Brij® 52 [9004-95-9] [polyoxyethylene(2) cetyl ether] $\text{C}_{16}\text{H}_{33}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ , n~2 ★ n $\bar{f}$ 1.4660 d 0.978 Fp >230°F(110°C) <i>R&amp;S</i> 1(1),229F <i>RTECS</i> # TR1581470	100g	11.50			
	Average $M_n$ ca. 330. HLB 5.3	1kg	40.10			
38,885-8	Brij® 56 [9004-95-9] [polyoxyethylene(10) cetyl ether] $\text{C}_{16}\text{H}_{33}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ ,..... ★ n~10 mp 32-34° d 0.977 Fp >230°F(110°C) <i>R&amp;S</i> 1(1),229G <i>RTECS</i> # TR1581470	100g	11.50			
	Average $M_n$ ca. 683. HLB 12.9	1kg	40.10			
23,599-7	Brij® 58 [9004-95-9] [polyoxyethylene(20) cetyl ether] $\text{C}_{16}\text{H}_{33}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ ,..... n~20 mp 38-43° d 0.977 Fp >230°F(110°C) <i>FT-IR</i> 1(1),208C <i>Safety</i> 2,488B <i>R&amp;S</i> 1(1),229H <i>RTECS</i> # TR1581470	5g	11.30			
★	Average $M_n$ ca. 1,124. HLB 15.7	100g	11.70			
		500g	26.60			
38,888-2	Brij® 72 [9005-00-9] [polyoxyethylene(2) stearyl ether] $\text{C}_{18}\text{H}_{37}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ ,..... ★ n~2 mp 44-45° d 0.893 Fp >230°F(110°C) <i>R&amp;S</i> 1(1),229I <i>RTECS</i> # WI6250000	100g	11.50			
	Average $M_n$ ca. 359. HLB 4.9	1kg	41.60			
38,889-0	Brij® 76 [9005-00-9] [polyoxyethylene(10) stearyl ether] $\text{C}_{18}\text{H}_{37}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ ,..... ★ n~10 mp 37-39° d 0.964 Fp >230°F(110°C) <i>R&amp;S</i> 1(1),229J <i>RTECS</i> # WI6300000	100g	11.50			
	Average $M_n$ ca. 711. HLB 12.4	1kg	41.60			
23,600-4	Brij® 78 [9005-00-9] [polyoxyethylene(20) stearyl ether] $\text{C}_{18}\text{H}_{37}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ ,..... ★ n~20 mp 44-46° d 0.993 Fp >230°F(110°C) <i>FT-IR</i> 1(1),208D <i>Safety</i> 2,488C <i>R&amp;S</i> 1(1),229K <i>RTECS</i> # WI6475000 IRRITANT	5g	10.40			
	Average $M_n$ ca. 1,152. HLB 15.3	100g	12.20			
		500g	23.30			
38,886-6	Brij® 92 [9004-98-2] [polyoxyethylene(2) oleyl ether] $\text{C}_{18}\text{H}_{35}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ , n~2 ★ n $\bar{f}$ 1.4620 d 0.912 Fp >230°F(110°C) <i>R&amp;S</i> 1(1),229L <i>RTECS</i> # RK2800000	100mL	14.10			
	Average $M_n$ ca. 357. HLB 4.9	1L	47.00			
43,128-1	Brij® 97 [9004-98-2] [polyoxyethylene(10) oleyl ether] $\text{C}_{18}\text{H}_{35}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ ,..... ★ n~10 Average $M_n$ ca. 709. HLB 12.4	100mL	13.30			
		500mL	26.20			
43,624-0	Brij® 98 [9004-98-2] [polyoxyethylene(20) oleyl ether] $\text{C}_{18}\text{H}_{35}(\text{OCH}_2\text{CH}_2)_n\text{OH}$ ,..... ★ n~20 Average $M_n$ ca. 1,150. HLB 15.3	5g	10.90			
		100g	11.40			
		500g	26.30			

■ Solvent BI ■

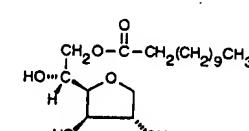
	Solvent Blue 38, see 22,934-2, Luxol® Fast Blue MBSN page 1028		
22,912-1	★ Solvent Blue 59 [6994-46-3] [Atlasol Blue 2N, 1,4-bis(ethylamino)-9,10-anthraquinone, C.I. 61552, Sudan Blue] FW 294.36 mp 215-217° $\lambda_{max}$ 640(595)nm <i>Beil.</i> 14(3),440 <i>FT-NMR</i> 1(3),554B <i>Safety</i> 2,3160D <i>R&amp;S</i> 1(2),2771D <i>UV-Vis</i> 648 <i>IRRITANT</i> Dye content ~98%	25g	33.00
	Solvent Brown 1, see 23,603-9, Fat Brown RR page 807		
	Solvent Green 1, see 22,910-5, Malachite Green base page 1035		
21,198-2	★ Solvent Green 3 [128-80-3] (C.I. 61565) FW 418.50 mp 220-221° $\lambda_{max}$ 644(607)nm <i>Beil.</i> 14,199 <i>Merck Index</i> 12,8251 <i>FT-IR</i> 1(2),1019C <i>Safety</i> 2,3161A <i>R&amp;S</i> 1(2),2771F <i>UV-Vis</i> 649 <i>RTECS#</i> CB5775000 <i>IRRITANT</i> Dye content ~95%	50g	28.30
	Solvent Green 7, see 8-Hydroxy-1,3,6-pyrenetrisulfonic acid, trisodium salt		
	Solvent Green 11, see 27,726-6, Luxol® Brilliant Green BL page 1028		
	Solvent Orange 1, see 19,967-2, Sudan Orange G page 1529		
	Solvent Orange 2, see 34,466-4, Orange OT page 1253		
	Solvent Orange 7, see 19,965-6, Sudan II page 1529		
	Solvent Orange 15, see 23,547-4, Acridine Orange base page 33		
	Solvent Red 19, see 20,161-8, Sudan Red 7B page 1530		
	Solvent Red 23, see 19,811-0, Sudan III page 1529		
	Solvent Red 24, see 19,810-2, Sudan IV page 1529		
	Solvent Red 26, see 23,411-7, Oil Red EGN page 1251		
	Solvent Red 27, see 19,819-6, Oil Red O page 1252		
	Solvent Red 41, see 85,734-3, Basic Fuchsin page 143		
	Solvent Red 43, see 23,025-1, Eosin Y, free acid page 732		
	Solvent Red 44, see 19,955-9, Methyl Eosin page 1116		
	Solvent Red 45, see 19,954-0, Ethyl Eosin page 775		
	Solvent Red 49, see 23,414-1, Rhodamine B base page 1465		
	Solvent Red 72, see 21,672-0, 4',5'-Dibromofluorescein page 523		
	Solvent Violet 8, see 24,221-7, Methyl Violet B base page 1175		
	Solvent Yellow 2, see 11,449-9, Methyl Yellow page 1176		
	Solvent Yellow 3, see 12,156-8, Fast Garnet GBC base page 806		
	Solvent Yellow 7, see 13,108-3, 4-Phenylazophenol page 1298		
	Solvent Yellow 14, see 10,362-4, Sudan I page 1529		
	Solvent Yellow 33, see 23,413-3, Quinoline Yellow page 1458		
	Solvent Yellow 94, see F245-6, Fluorescein page 816		
	Sorbic acid, see 2,4-Hexadienoic acid		
	Sorbic aldehyde, see 18,034-3, 2,4-Hexadienal page 884		
31,821-3	★ Sorbitan monolaurate [1338-39-2] (Span® 20) FW 346.47 $n_D^{20}$ 1.4740 d 1.032 ..... Fp >230°F(110°C) <i>Merck Index</i> 12,8872 <i>Safety</i> 2,3162C <i>R&amp;S</i> 1(1),759M <i>RTECS#</i> WG2920000 HLB 8.6	5mL 250mL 1L	15.70 17.50 53.80
38,891-2	★ Sorbitan monooleate [1338-43-8] (Span® 80) FW 428.62 $n_D^{20}$ 1.4800 d 0.986 ..... Fp >230°F(110°C) <i>Merck Index</i> 12,8872 <i>R&amp;S</i> 1(1),761B <i>RTECS#</i> WG2932400 HLB 4.3	250mL 1L	15.10 47.80
38,892-0	★ Sorbitan monopalmitate [26266-57-9] (Span® 40) FW 402.58 mp 46-47° ..... Fp >230°F(110°C) <i>R&amp;S</i> 1(1),759N <i>RTECS#</i> WG2932900 <i>IRRITANT</i> HLB 6.7	250g 1kg	15.10 47.80
31,822-1	★ Sorbitan monostearate [1338-41-6] (Span® 60) FW 430.63 mp 56-58° ..... Fp >230°F(110°C) <i>Merck Index</i> 12,8872 <i>FT-NMR</i> 1(1),1055A <i>Safety</i> 2,3163B <i>R&amp;S</i> 1(1),761A <i>RTECS#</i> WG2933500 HLB 4.7	5g 250g 1kg	15.50 16.10 50.80



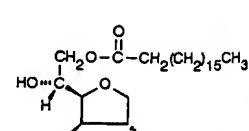
22,912-1



21,198-2



31,821-3



31,822-1

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